



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422  
Patentee : Dah Ben Liang, et al.  
Patent No. : 5,791,422  
Patent Issue Date : August 11, 1998  
Title : ROCK BIT WITH HARDFACING MATERIAL  
INCORPORATING SPHERICAL CAST  
CARBIDE PARTICLES

Docket No. : 36912/CM/S61

*H. H. DeGloria*  
*E. H. H. H.*  
*10/13/02*

DECLARATION FOR REISSUE PATENT APPLICATION

Assistant Commissioner for Patents  
Washington, D.C. 20231

Post Office Box 7068  
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that my residence and post office address is listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising spherical cast tungsten carbide particles having a particle size less than 40 mesh without also limiting such tungsten carbide particle size to a range to about 16 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full

**Docket No. 36912/CM/S61**

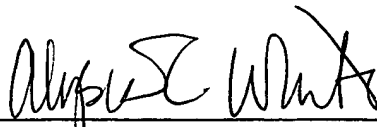
scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part. Furthermore, all errors not covered by my earlier submitted Declaration arose without deceptive intent.

I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated: \_\_\_\_\_

7-19-02

  
\_\_\_\_\_  
Alysia C. White  
4607 Lake Village Drive  
Fulshear, Texas 77441

CM/cmc

CC PAS434241.1-\* -6/3/02 11:43 AM



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422  
Patentee : Dah Ben Liang, et al.  
Patent No. : 5,791,422  
Patent Issue Date : August 11, 1998  
Title : ROCK BIT WITH HARDFACING MATERIAL  
INCORPORATING SPHERICAL CAST  
CARBIDE PARTICLES

Docket No. : 36912/CM/S61



DECLARATION FOR REISSUE PATENT APPLICATION

Assistant Commissioner for Patents  
Washington, D.C. 20231

Post Office Box 7068  
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that my residence and post office address is listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising spherical cast tungsten carbide particles having a particle size less than 40 mesh without also limiting such tungsten carbide particle size to a range to about 16 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full

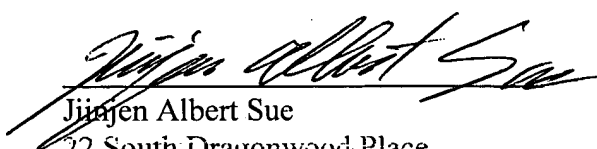
**Docket No. 36912/CM/S61**

scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part. Furthermore, all errors not covered by my earlier submitted Declaration arose without deceptive intent.

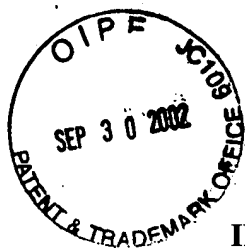
I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated: 7/4/2002

  
Jijjen Albert Sue  
22 South Dragonwood Place  
The Woodlands, Texas 77381

CM/cmc  
CC PAS434231.1-\*6/3/02 11:44 AM



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422  
Patentee : Dah Ben Liang, et al.  
Patent No. : 5,791,422  
Patent Issue Date : August 11, 1998  
Title : ROCK BIT WITH HARDFACING MATERIAL  
INCORPORATING SPHERICAL CAST  
CARBIDE PARTICLES

Docket No. : 36912/CM/S61

DECLARATION FOR REISSUE PATENT APPLICATION

Assistant Commissioner for Patents  
Washington, D.C. 20231

Post Office Box 7068  
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that my residence and post office address is listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

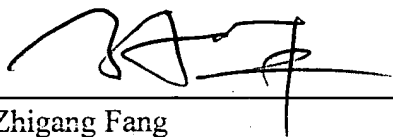
I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising spherical cast tungsten carbide particles having a particle size less than 40 mesh without also limiting such tungsten carbide particle size to a range to about 16 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full

scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part. Furthermore, all errors not covered by my earlier submitted Declaration arose without deceptive intent.

I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated: 7/15/02

  
\_\_\_\_\_  
Zhigang Fang  
~~230 South Crimson Clover Circle~~  
~~The Woodlands, Texas 77381~~

6718 South Agua Vista Court  
Salt Lake City, UT 84121

CM/cmc  
CC PAS434235.1-\* -6/3/02 11:44 AM



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422  
Patentee : Dah Ben Liang, et al.  
Patent No. : 5,791,422  
Patent Issue Date : August 11, 1998  
Title : ROCK BIT WITH HARDFACING MATERIAL  
INCORPORATING SPHERICAL CAST  
CARBIDE PARTICLES

Docket No. : 36912/CM/S61

**DECLARATION FOR REISSUE PATENT APPLICATION**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Post Office Box 7068  
Pasadena, CA 91109-7068

Commissioner:

As a below named inventor, I hereby declare that my residence and post office address is listed below, I am a citizen of the United States of America, and I believe I am an original, first and joint inventor of the subject matter described and claimed in U.S. Patent No. 5,791,422 (the "'422 Patent"), issued on August 11, 1998, for which a reissue patent is sought on the invention entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, the specification of which is attached hereto. The application for the '422 Patent was filed on March 12, 1997, as Application Serial No. 08/815,745 (the "'745 Application").

I acknowledge the duty to disclose information known to me to be material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I believe that the '422 Patent is partially inoperative because none of the claims in the '422 Patent are directed to a rock bit comprising a cutting cone having a number of teeth which include a hardfacing comprising spherical cast tungsten carbide particles having a particle size less than 40 mesh without also limiting such tungsten carbide particle size to a range to about 16 mesh. The novelty of this aspect of my invention was erroneously overlooked, as I did not appreciate the full

scope of the invention being claimed at the time the '745 Application was filed and during its prosecution. My failure to recognize the full scope of the invention being claimed was inadvertent as is evidenced by the fact that although this novel feature was described in the specification of the '745 Application, it was not broadly claimed. As a result of this failure, I claimed less than I had a right to claim in the '422 Patent. This error arose without any deceptive intention on my part. Furthermore, all errors not covered by my earlier submitted Declaration arose without deceptive intent.

I hereby state that I have reviewed and understand the content of the above-identified application, including the original claims 1-27 and the added reissue claims 28-38 which are directed to a rock bit comprising a cutting cone having a number of teeth comprising a hardfacing comprising steel and spherical tungsten carbide particles.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the reissue application or any patent issuing thereon.

Dated: 6/19/02

Dah-Ben Liang

Dah-Ben Liang  
27 Rustic View Court  
The Woodlands, Texas 77381





PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For : Reissue of U.S. Patent No. 5,791,422  
Patentee : Dah-Ben Liang, et al.  
Patent No. : 5,791,422  
Patent Issue Date : August 11, 1998  
Title : ROCK BIT WITH HARDFACING MATERIAL  
INCORPORATING SPHERICAL CAST  
CARBIDE PARTICLES  
Docket No. : 36912/CM/S61

**RECEIVED**

OCT 07 2002

**GROUP 3600**

**CONSENT OF ASSIGNEE**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Post Office Box 7068  
Pasadena, CA 91109-7068

Commissioner:

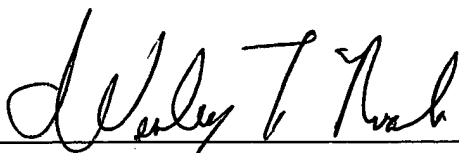
Smith International, Inc., assignee of the entire interest in U.S. Patent No. 5,791,422, entitled ROCK BIT WITH HARDFACING MATERIAL INCORPORATING SPHERICAL CAST CARBIDE PARTICLES, issued August 11, 1998, hereby consents to the Application for Reissue of this patent for the same invention on the accompanying specification and claims.

Smith International, Inc. hereby offers to surrender the original Letters Patent No. 5,791,422.

The undersigned is empowered to sign on behalf of the Assignee.

SMITH INTERNATIONAL, INC.

Dated: 7-19-02

By:   
Name: Wesley T. Noah  
Title: Chief Patent Counsel